CONFERENCE REPORT

THE FIRST INTERNATIONAL CONFERENCE ON MUSHROOM BIOLOGY AND MUSHROOM PRODUCTS

by J. S. Chilton

On August 23-26, 1993, the First International Conference on Mushroom Biology and Mushroom Products took place in Hong Kong. Organized by UNESCO and the Chinese University of Hong Kong, the conference marked the 30th anniversary of the University, an institution that supports a wide range of mushroom research. The conference chairman, Dr. S. T. Chang, is widely noted in the field of mushroom science for his contributions to mushroom cultivation and his research into medicinal mushroom development and applications.

The program consisted of poster displays and plenary sessions. Topics included cultivation technology of a wide range of edible mushroom species. bioconversion of waste materials by fungi, genetics and breeding, nutritional aspects, and the pharmacology and clinical uses of medicinal mushrooms.

In regard to the medicinal uses, a highlight of the program was a presentation by Dr. Goro Chihara,[1] formerly with the National Cancer Research Institute in Japan. In the late sixties and early seventies. Dr. Chihara isolated and characterized lentinan from shiitake (Lentinus *edodes),* a polysaccharide which went through extensive clinical trials and is now an approved drug in Japan for use with chemotherapy in cancer patients. Dr. Chihara believes that cancer research should be focused on augmentation of intrinsic host defuse mechanisms rather than on cell-killing substances. He calls lentinan a "Host Defense Potentiator" and states that it restores homeostasis and potentiates intrinsic resistance against disease. He also feels that these substances may hold the key to protection from aging and believes they may form a bridge between modern immunology and oriental medicine.

Another mushroom, Coriolus versicolor, was the topic of many researchers[2] The protein-bound polysaccharides, PSF and PSK, derived from Coriolus mycelia and mushrooms respectively, are also in clinical use as Host Defense Potentiators. After chemo- or radiotherapy, PSP increases appetite, lessens pain, and improves survival rate of cancer patients. Both of these substances are taken orally and are approved medicines in Japan (PSK), Hong Kong, and China (PSP).

Studies with Ganoderma, the reishi mushroom, were presented by researchers worldwide. Dr. Vladimir Kupin: of the Cancer Research Center in Moscow, has been using a reishi extract as a Host Defense Potentiator with patients and has observed positive results. He has also seen a normalization of T-cells in studies with Russian astronauts. Studier? by Dr. Geng-Tao Liu of the Chinese Academy of Medical Sciences, using injections of spore and mycelial extracts. detailed the effectiveness of these preparations on skin and collagen disease. He found similar pharmacologic activity in animal and human models. And Dr. Ching-Hua Su,' of the Taipei Medical College, reported on his continuing investigations into the hepato-protective activity of Ganoderma triter-penes. Of interest was his finding that crude extracts were more effective free-radical scavengers than isolated refined compounds.

Reishi, *Ganoderma lucidurn*
1989, Ira Kenedy

Other medicinal mushroom research of note centered around ***Tremella fuciformus***[8] the edible white jelly fungus, Collybia ***confluens***[9] a relative of the tasty Enokitake so common in Japanese cuisine, ***Hericium erinaceus,*** and **Auriculania *auricula.*** And although no research was presented on ***Cordyceps*** species, it is interesting to note that at the recent Chinese National Athletic Games in Beijing, record-setting performances by Chinese athletes made public the use of ***Cordyceps*** as a performance-enhancing supplement.

The wealth of all this research pointed to the increasing interest in mushrooms as a source of medicinal compounds. In fact, in his opening address to the symposium, Prof. Chang noted that for the first time medicinal mushroom products were valued at over a billion dollars in sales worldwide (mainly lentinan) and that if this growth continued, there may come a point where they overtake the value of mushrooms as food. These were telling words, for as this symposium has demonstrated, the concepts of food and medicine are becoming less parallel and more intertwined. Ž

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